

WHAT IS CLAIMED IS:

1. An apparatus for repair of vasculature, comprising:
a first elongate member for placement within vasculature, the first
elongate member including a first part; and
5 a second elongate member for placement within vasculature, the
second elongate member including a substructure that changes flow within
vasculature or actively cooperates with flow within vasculature to accomplish
engagement of the substructure with the first part of the first elongate member.
- 10 2. The apparatus of claim 1, wherein the substructure of the second
elongate member includes a balloon configured to create retrograde flow within
vasculature.
- 15 3. The apparatus of claim 1, wherein the substructure of the second
elongate member includes rudders configured to be responsive to flow within
vasculature.
- 20 4. The apparatus of claim 1, wherein the substructure of the second
elongate member includes an open flow sock configured to be responsive to flow
within vasculature.

5. The apparatus of claim 1, wherein the substructure of the second elongate element includes retractable structure that creates a pathway and further including a third elongate member sized to be received within the pathway.

5 6. The apparatus of claim 5, wherein the retractable structure includes a balloon catheter.

7. The apparatus of claim 5, wherein the retractable structure includes a tampon.

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8. The apparatus of claim 1, the first elongate member configured to carry a repair device.

9. An apparatus for repair of vasculature, comprising:
15 a first elongate member for placement in vasculature including a target; and
a second elongate member for placement in vasculature, the second elongate member including a magnet.

10. The apparatus of claim 9, the first elongate member further including
20 a target ball.

11. The apparatus of claim 9, the second elongate member including a magnet snare.

12. The apparatus of claim 9, wherein the target of the first elongate member comprises ferromagnetic material.

13. The apparatus of claim 12, the first elongate member configured to carry a repair device.

14. The apparatus of claim 9, wherein the magnet is a soft magnet.

15. An apparatus for repair of vasculature, comprising:
a first elongate member for placement within vasculature, the first elongate member including a first engaging portion; and
a second elongate member for placement within vasculature, the second elongate member including a retractable curved or bent member that is straightened after the retractable member is placed adjacent to the first engaging portion.

16. The apparatus of claim 15, wherein the retractable member is in the form of a coiled cone.

17. The apparatus of claim 15, wherein the retractable member is in the form of a coiled sphere.

18. The apparatus of claim 15, wherein the retractable member is in the
5 form of a flattened wheel.

19. The apparatus of claim 18, the first elongate member configured to carry a repair device.

10 20. A method for assembling a repair device in situ, comprising:
placing a first catheter within vasculature, the first catheter including a snare device and an elongate member;
placing a second catheter configured with a repair device having a target within vasculature; and
15 snaring the second catheter at or inferior to a longitudinal position occupied by the target.

21. The method of claim 20, further comprising:
inserting a guidewire through the elongate member of the first catheter;
20 aligning the guidewire with the target of the repair device; and
disengaging the snare device from the second catheter.

22. The method of claim 21, wherein the first catheter includes an expandable member and further comprising:
expanding the expandable member to displace the guidewire relative to the second catheter.

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23. An apparatus for repair of vasculature, comprising:
a first elongate member for placement within vasculature, the first elongate member configured with a repair device having a target; and
a second elongate member for placement within vasculature, the second
10 elongate member including aligning structure that aligns the second elongate member adjacent to the first elongate member in a fixed plane.

24. The apparatus of claim 23, wherein the aligning structure is adjustable such that the second elongate member may be brought closer to or further from the
15 first elongate member.

25. The apparatus of claim 23, wherein the second elongate member may be advanced in the superior or inferior direction relative to the first elongate member after the first and second elongate members are aligned.

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26. The apparatus of claim 23, wherein the second elongate member may be rotated about the first elongate member after the first and second elongate members are aligned.

5 27. The apparatus of claim 23, wherein the aligning structure comprises one or more superelastic wires that project from the second elongate member.

28. A method for assembling a repair device in situ, comprising:
placing a first catheter configured with a repair device having a target within
10 vasculature;

placing a second catheter within vasculature, the second catheter including aligning structure that aligns the second catheter adjacent to the first catheter in a fixed plane; and

aligning the second catheter adjacent to the first catheter at or inferior to a
15 longitudinal position occupied by the target.

29. The method of claim 28, wherein the second catheter includes a guidewire and further comprising:

aligning the guidewire with the target of the repair device; and
20 disengaging the second catheter from the first catheter.

30. The method of claim 29, wherein the aligning structure is adjustable and further comprising:

adjusting the aligning means such that the second catheter is brought closer to or further from the first catheter.

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31. A method for assembling a repair device in situ, comprising:

placing a first catheter within vasculature, the first catheter including a snare device and an elongate member;

placing a second catheter configured with a repair device, the repair device
10 having an anchor that anchors the superior end of the repair device in vasculature;
snaring the second catheter at or inferior to the anchor; and
adjusting the second catheter axially.

32. An apparatus for repair of vasculature, comprising:

15 a first elongate member having a superior end and an inferior end;

a second elongate member having a superior end and an inferior end and
coaxially slideably disposed within the first elongate member such that the second
elongate member may be moved longitudinally with respect to the first elongate
member;

20 a swiveling guide pivotally attached to the second elongate member, the
swiveling guide having a first end and a second end with an aperture therethrough;
and

a snare catheter having a first end and a second end and slideably disposed within the first elongate member such that the snare catheter may be moved longitudinally with respect to the first elongate member, the snare catheter adapted to be inserted into the swiveling guide aperture and moved therethrough such that
5 the second end of the snare catheter protrudes from the second end of the swiveling guide.

33. The apparatus of claim 32, wherein the first elongate member has a dual lumen.
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34. The apparatus of claim 32, wherein the swiveling guide is elbow shaped.

35. The apparatus of claim 32, further comprising a means of resisting
15 retraction of the snare catheter completely from the swiveling guide once it is inserted therethrough.

36. The apparatus of claim 35, wherein the means of resisting comprises a tapered second end of the snare catheter.
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37. The apparatus of claim 35, wherein the means of resisting comprises a localized increase in diameter near the second end of the snare catheter.

38. The apparatus of claim 35, wherein the means of resisting comprises forming the swiveling guide of a material that facilitates sliding the snare catheter therethrough and resists retracting the snare catheter therefrom.

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39. The apparatus of claim 35, wherein the second end of the snare catheter is adapted to be retracted into the swiveling guide after being inserted therethrough.

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40. The apparatus of claim 32, wherein the snare catheter is adapted to cause the swiveling guide to rotate in a clockwise direction when moved longitudinally in the superior direction with respect to the first elongate member and to cause the swiveling guide to rotate in a counter-clockwise direction when moved longitudinally in the inferior direction with respect to the first elongate member.

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41. The apparatus of claim 32, further comprising a stop attached to the second elongate member, the stop adapted to limit the rotation of the swiveling guide.

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42. The apparatus of claim 41, wherein the clockwise and counter-clockwise rotation of the swiveling guide is limited to between a substantially

parallel position with respect to the second elongate member and a substantially perpendicular position with respect to the second elongate member.

43. The apparatus of claim 32, further comprising means for releasably
5 attaching the snare catheter to the inferior end of the second elongate member.

44. The apparatus of claim 32, wherein the second elongate member includes an expandable member.

10 45. The apparatus of claim 32, wherein the second elongate member is configured to carry a repair device.

46. The apparatus of claim 32, wherein the snare catheter has a localized increase in diameter between the first end and the second end that does not enter the
15 swiveling guide.

47. The apparatus of claim 32, wherein the snare catheter has a marker at the first end, the marker indicating when the snare catheter second end is fully retracted such that it is aligned with the swiveling guide second end.

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48. The apparatus of claim 32, wherein the snare catheter second end and swiveling guide second end have radiopaque markers.

49. A method for assembling a repair device in situ, comprising:

placing a catheter within vasculature, the catheter having a superior end and an inferior end and including a snare device and an elongate member slideably

5 disposed therein and a repair device having a target, the elongate member having a swiveling guide pivotally attached thereto;

sliding the snare device in the superior direction through the swiveling guide such that the snare device protrudes in the inferior direction through the target of the repair device;

10 snaring a guidewire with the snare device;

retracting the snare device in the inferior direction such that the guidewire is brought into the target of the repair device; and

releasing the guidewire from the snare device.

15 50. The method of claim 49, further comprising:

retracting the snare device in the inferior direction such that the swiveling guide assumes a substantially parallel position with respect to the elongate member;

retracting the elongate member and snare device into the catheter; and

removing the catheter from the vasculature.